

Claims

CLAIM 1. Procedure for manufacturing decorative glass panels, wherein:

the panels comprise each a base-pane and shaped-pieces, and the shaped-pieces lie flat upon, and are fused to, the base pane;

the procedure includes:

cutting out the shaped-pieces from an initial-sheet of glass in a numerically-controlled glass-cutting machine;

the glass-cutting machine is a machine in which:

a sheet of glass is placed in the path of a cutting-head, and the cutting-head is operable to cut right through the sheet of glass;

in which the arrangement of the machine is such that the cutting-head follows a profile laterally with respect to the sheet of glass;

and the profile followed by the cutting-head relative to the sheet of glass is numerically programmable;

providing a template, having apertures, and the apertures correspond to the cut shapes of the shaped-pieces;

positioning the shaped-pieces on the base-pane, using the apertures in the template to locate the pieces in position thereon;

placing, in a furnace, the base-pane with the shaped-pieces resting thereon in the positions and orientations thereon as set by the apertures in the template;

ensuring that the shaped-pieces do not become disturbed, in the furnace, from their set positions and orientations on the base-pane;

heating the base-pane and the shaped-pieces together in the furnace, whereby the shaped-pieces become fused to the base-pane, and withdrawing the panel comprising the base-pane with the shaped-pieces fused thereto, after cooling, from

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the furnace.

Claim 2. Procedure of claim 1, wherein the cutting-head of the glass-cutting machine includes a water-jet, of such nature as to cut right through the sheet of glass.

Claim 3. Procedure of claim 1, wherein the apertures in the template are cut out on an NC machine.

Claim 4. Procedure of claim 3, wherein the procedure includes cutting the apertures in the template in a template cutting machine, in which the cutting-head follows a profile laterally with respect to the template, and the profile followed by the cutting-head relative to the template is numerically programmable.

Claim 5. Procedure of claim 1, including providing a coatings-template, placing the same over the base-pane; and applying colouring material onto the base-pane, through apertures in the coating-template.

Claim 6. Procedure of claim 1, wherein the operations of picking the shaped-pieces from the cutting machine, and placing the shaped-pieces in the apertures of the template on the base-pane, are carried out manually, by a human operator.

Claim 7. Procedure of claim 3, wherein, in respect of each aperture, the aperture is cut with a margin of clearance between the aperture and the respective shaped-piece placed in the aperture, whereby the shaped-piece is loose in the aperture, and the margin of clearance is small enough that no point on a shaped-piece cut exactly to the pre-programmed profile, and placed in the aperture, can be displaced

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laterally within the aperture a distance overall of no more than 3 mm.

Claim 8. Procedure of claim 7, wherein the shaped-piece is chunky in shape, and the shaped-piece can be displaced no more than 1 milli-metre.

Claim 9. Procedure of claim 1, wherein the procedure includes making the template from a combustible material, and keeping the template in place on the base-pane during firing, whereby the template is destroyed.

Claim 10. Apparatus of claim 1, wherein the procedure includes removing the template from the shaped-pieces and from the base-pane, prior to placing the base-pane and the shaped-pieces in the furnace.

Claim 11. Procedure of claim 1, wherein all the shaped-pieces and the base pane are cut from the same initial-sheet of glass.

Claim 12. Apparatus of claim 1, wherein the procedure includes:

placing the template directly upon the base-pane, in such manner that the shaped-pieces, placed in the apertures, can rest upon the base-pane, and be held retained in position laterally with respect to the base-pane by the presence of the template;

fixing the template into a pre-determined position and orientation, in the lateral sense, relative to the base-pane;

gathering the shaped-pieces, thus cut out on the cutting machine, and placing the shaped-pieces flat upon, and in direct contact with, the base-pane, placing and orientating

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the shaped-pieces into their respective apertures in the template.

Claim ~~12~~³. Apparatus of claim 1, wherein the procedure includes:

placing the template on a backing-sheet, in such manner that the shaped-pieces, placed in the apertures, can rest upon the backing-sheet, and be held retained in position laterally with respect to the backing-sheet by the presence of the template;

fixing the template into a pre-determined position and orientation, in the lateral sense, relative to the backing-sheet;

gathering the shaped-pieces, thus cut out on the cutting machine, and placing the shaped-pieces flat upon the backing-sheet, placing and orientating the shaped-pieces into their respective apertures in the template;

and transferring the backing-sheet and the shaped-pieces positioned thereon, onto the base-pane.

Claim 13. Apparatus of claim 12, wherein the procedural step of gathering the shaped-pieces and placing the shaped-pieces flat upon the backing-sheet, and of placing and orientating the shaped-pieces into their respective apertures in the template, is carried out manually, by direct hand operation.

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